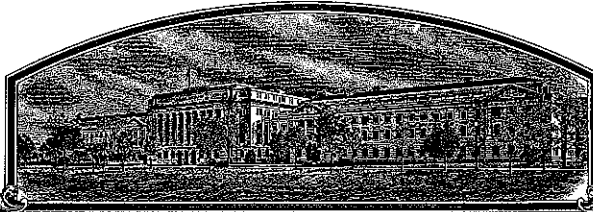


No.

200500194



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Cascade International Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Turbo'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twentieth day of August, in the year two thousand and eight.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Cascade International Seed Company		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME CAS-MC1, MC1	3. VARIETY NAME Turbo
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) Cascade International Seed Company 8483 West Stayton Road Aumsville, Oregon 97325		5. TELEPHONE (include area code) (503) 749-1822	FOR OFFICIAL USE ONLY PVPO NUMBER 200500194 FILING DATE March 31, 2005
		6. FAX (include area code) (503) 749-1824	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation	8. IF INCORPORATED, GIVE STATE OF INCORPORATION OR	9. DATE OF INCORPORATION 1986	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Greg Hagen Cascade International Seed Company 8483 West Stayton Road Aumsville, Oregon 97325		FILING AND EXAMINATION FEES: \$ 3652 DATE 3/31/2005 CERTIFICATION FEE: \$ 768.00 DATE 7/29/2008	
11. TELEPHONE (include area code) (503) 749-1822	12. FAX (include area code) (503) 749-1824	13. E-MAIL ghagen@grass-seed.com	
14. CROP KIND (Common Name) Tall Fescue	16. FAMILY NAME (Botanical) Gramineae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
15. GENUS AND SPECIES NAME OF CROP Festuca arundinacea	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)	
19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER CASCADE International Seed Company		SIGNATURE OF OWNER	
NAME (Please print or type) Greg Hagen		NAME (Please print or type) Greg Hagen	
CAPACITY OR TITLE General Manager	DATE MARCH 24 2005	CAPACITY OR TITLE	DATE

(See reverse for instructions and information collection burden statement)

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvpo/pvpindex.htm>

#200500194

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide a statement as to the limitation and sequence of generations that may be certified.)

23. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

August 30 2004

24. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Exhibit A

Turbo (CAS-MC1) Tall Fescue (*Festuca arundinacea*)

Origin and Breeding History

ORIGIN: "Turbo" originates from twenty-one parents selected from fifteen maternal sources evaluated in progeny turf plots at the Rutgers turfgrass research facilities located in Adelphia and New Brunswick, New Jersey from turf trials planted in 1992, 1993, 1995 and 1996. Nineteen percent of the maternal sources trace to selected plants from or related to the variety "Apache." Nineteen percent trace to plants selected from or related to the variety "Duster." Nineteen percent trace to plants selected from or related to the variety "Mini-Mustang." Fourteen percent trace to plants selected from the University of Georgia State Hospital in 1977. Nine percent trace to plants selected from or related to the variety "Gazelle." Five percent trace to a plant identified as 5HF-44, which was evaluated and selected in 1984. Five percent trace to plants selected from or related to the variety "Arid." Five percent trace to a plant selected from a farm in Eastern North Carolina in 1975. Five percent trace to a plant identified as TF-M-3, which was selected from a perennial ryegrass (*Lolium perenne* L.) x tall fescue hybridization program in 1992.

BREEDING HISTORY: Large numbers of single-plant progenies were seeded in turf evaluation trials at the Adelphia Plant Science Research Farm in 1991, 1992, 1993 and 1995. An additional trial was established at the Rutgers turfgrass research facility in North Brunswick in 1992. The plants selected for progeny evaluation were selected from spaced-plant nurseries located at Adelphia following varying cycles of phenotypic and genotypic selection of germplasm selected from old turfs and germplasm from or related to the variety "Rebel."

Following a period of summer stress due to heat, drought and disease in 1996 and 1997, plants were selected from the best performing single-plant progeny turf plots. Three nurseries were established in 1996 from the best performing turf plots from the 1992 North Brunswick trial and the 1991, 1993 and 1995 Adelphia trials, totaling 6060 plants. These were selected from 2065 single-plot progenies from 25 different populations. In addition, two nurseries were established in the spring of 1997. The first, consisting of a total of 1020 plants, was selected from large persistent clonal patches from 1060 single-plot progenies from 17 populations from the 1992 tall fescue trials at Adelphia and New Brunswick. The second nursery, consisting of 2400 plants was selected from the best performing turf plots from the 1995 and 1996 tall fescue trials at Adelphia. These were chosen from 2085 plots from 21 different populations.

Selection of progenies was based on performance records as well as appearance at the time the plants were selected from the progeny plots. Selection of plants from each progeny was based on attractive dark green color, medium-fine leaves, abundant tillering, and freedom from disease. Selected plants were transferred to a greenhouse and subsequently established to the spaced-plant field nurseries at Adelphia in 1996 and the spring of 1997.

Exhibit A, page 2

In the spring of 1998, twenty-four plants were selected from those nurseries for characteristics such as medium-early maturity, dark green color, intermediate shoot density, semi-dwarf growth habit, freedom from disease and high seed yield potential and moved, prior to anthesis, to an isolated crossing block. In the fall of 1998, one turf plot of each line was established at Adelphia and 1 gram of seed from each plant was sent to Cascade International Seed Company.

In the fall of 1998, an isolated F1 breeder nursery was established at the Cascade International Seed Company research facilities in Aumsville, Oregon. The 21 half-sib progeny lines were randomized and replicated and included approximately 150 plants from each line. Plants in the F1 nursery were further selected for medium-early maturity, dark green color, intermediate shoot density, semi-dwarf growth habit, freedom from disease and high seed yield. Cycle 2 breeder seed of "Turbo" was produced from this F1 nursery in 1999 and 2000.

Evidence of Uniformity and Stability: No off-type plants or variants have been observed in the reproduction and multiplication of "Turbo" tall fescue. "Turbo" is a uniform and stable variety. Breeder seed and commercial seed have produced turf of equal quality and uniformity. Commercial seed fields are uniform in appearance.

Turbo has been uniform and stable ^{Since 2003} for 5 years of commercial production.

Info added in per applicant's request & authorization - bt:7/7/08).

Exhibit B**Turbo (CAS-MC1) Tall Fescue (*Festuca arundinacea*)****Novelty Statement**

'Turbo' is a unique cultivar bred and selected on the basis of attractive dark green color, medium-fine leaves, abundant tillering, freedom from disease, improved seed production, and uniform maturity and phenotype.

The morphology of 'Turbo' most closely resembles the variety 'Silverado'.

However, 'Turbo' exhibits a significantly shorter tiller leaf length than 'Silverado.' (Please see Table 1.)

2000 Tiller Leaf Length at Aumsville, Oregon: 'Turbo' = 11.22 cm, 'Silverado' = 12.88 cm, LSD @ 5% = 1.37 cm.

2001 Tiller Leaf Length at Aumsville, Oregon: 'Turbo' = 12.52 cm, 'Silverado' = 14.96 cm, LSD @ 5% = 1.81 cm.

'Turbo' also exhibits a significantly earlier heading date than 'Silverado.' (Please see Table 2.)

2000 Heading Date at Aumsville, Oregon: 'Turbo' = May 22, 'Silverado' = May 29, LSD @ 5% = 3.9 days.

2001 Heading Date at Aumsville, Oregon: 'Turbo' = May 16 'Silverado' = May 28, LSD @ 5% = 2.8 days.

#200500194

Exhibit B, Table 1**TURBO (CAS-MC1) Tall Fescue (*Festuca arundinacea*)**

Tiller Leaf Length Measurements of tall fescue cultivars taken in the spring of 2000 and 2001 from spaced-plant nurseries planted at Aumsville, Oregon in October 1999.

<u>CULTIVAR</u>	TILLER LEAF LENGTH (cm) <u>2000</u>	TILLER LEAF LENGTH (cm) <u>2001</u>	TILLER LEAF LENGTH (cm) <u>AVE: 2000-2001</u>
Kentucky 31	18.06	19.43	18.75
Turbo	11.22	12.52	11.87
Crewcut II	11.12	11.86	11.49
Mini-Mustang	13.12	14.06	13.59
Crewcut	13.72	15.11	14.42
Bonanza	16.59	17.98	17.29
Rebel Jr.	14.38	15.13	14.76
Shortstop	12.67	13.58	13.13
Silverado	12.88	14.96	13.92
Bonsai	8.44	10.29	9.34
LSD @ .05	1.37	1.81	
CV%	21.58	19.27	

LSD and CV% are for entire trial (19 entries).

#200500194

Exhibit B, Table 2**TURBO (CAS-MC1) Tall Fescue (*Festuca arundinacea*)**

Heading Dates of tall fescue cultivars taken in the spring of 2000 and 2001 from spaced-plant nurseries planted at Aumsville, Oregon in October 1999.

<u>CULTIVAR</u>	HEADING DATE <u>2000</u>	HEADING DATE <u>2001</u>	HEADING DATE <u>Ave: 2000-2001</u>
Kentucky 31	05/20/00	05/16/01	May 18
Turbo	05/22/00	05/16/01	May 19
Crewcut II	05/25/00	05/16/01	May 21
Mini-Mustang	05/25/00	05/18/01	May 22
Crewcut	05/30/00	05/19/01	May 25
Bonanza	05/31/00	05/23/01	May 27
Rebel Jr.	05/27/00	05/24/01	May 26
Shortstop	05/30/00	05/26/01	May 28
Silverado	05/29/00	05/28/01	May 29
Bonsai	06/02/00	05/31/01	June 1
LSD @ .05	3.9 days	2.8 days	
CV%	31.7	28.7	

LSD and CV% are for entire trial (19 entries).

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

Exhibit C

OBJECTIVE DESCRIPTION OF VARIETY
Tall and Meadow Fescues (*Festuca* spp.)

NAME OF APPLICANT (S) Cascade International Seed Company	TEMPORARY OR EXPERIMENTAL Designations CAS-MC1, MCI	VARIETY NAME Turbo
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) 8483 West Stayton Road Aumsville, Oregon 97325		FOR OFFICIAL USE ONLY PVPO NUMBER #200500194

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal characteristics of this variety in the spaces below. Use leading zeros when necessary (e.g., 089 or 09) when number is either 99 or less or 9 or less. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Give additional description for all characteristics that cannot be adequately described in the form below. Cultural conditions must be stated in the comment section and plant number/data points shown in all tables.

1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

X 1 = *F. arundinacea* (Tall)

Turf Types

1 = Kentucky 31 2 = Rebel 3 = Olympic 4 = Bonanza 5 = Arid 6 = Rebel II
7 = Shortstop 8 = Silverado 9 = Rebel Jr. 10 = Mini Mustang 11 = Crewcut 12 = Bonsai

Forage Types

20 = Kentucky 31 21 = Martin 22 = Forager 23 = Mozark
24 = Kenhy 25 = AU Triumph 26 = Fawn 27 = Cajun

2 = *F. pratensis* (Meadow)

30 = Admira 31 = Beaumont 32 = Comtessa 33 = Ensign 34 = Trader

2. CYTOLOGY:

2n=6X=42 Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

X Transition Zone X West X Northeast X Other: Mid-Atlantic, Midwest, Mountain, Semi-Arid, Pacific and Southern.

4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

4 Maturity Class 1 = Very Early () 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)
6 = Bonanza 7 = Late (Silverado) 8 = () 9 = Very Late

Date Headed: 2000-2001 average = May 19.

Location: Aumsville, Oregon.

4. MATURITY: (continued)

03 Days Earlier Than 10Maturity Same As 01

Days Later Than

Comparison Variety

#200500194

5. MATURE PLANT HEIGHT cm: (Average of 100 culms from crown to top of panicle, if panicle is nodding, straighten)

* INTERNODE LENGTH cm:
(First internode subtending the flag leaf)88.50 cm Height13.11 cm Internode Length05.45 cm Shorter Than 7Height Same As 810.75 cm Taller Than 12

Comparison Variety

Length Same As 801.96 cm Taller Than 12

Comparison Variety

HEIGHT AT EAR EMERGENCE cm: (Flag leaf height from crown to flag leaf collar)

41.00 cm Height12.80 cm Shorter Than 4Height Same As 805.65 cm Taller Than 12

Comparison Variety

6. GROWTH HABIT: (Mature Plants)

8 1 = Prostrate () 3 = Semiprostrate () 5 = Horizontal ()

7 = Semierect (Rebel) 9 = Erect (Mini Mustang)

7. RHIZOMES: (Pseudo)

• mm Length X 1 = Absent (Shortstop) 2 = Rare (Rebel) 3 = Common ()

8. LEAF BLADE: (Tiller Leaves/Turf Color)

8 Color 1 = Light Green () 3 = Medium Light Green () 5 = Green ()
7 = Medium Dark Green () 9 = Very Dark Green ()

Specify Rating of Comparison Variety

5 Anthocyanin: 1 = Absent () 9 = Present ()3 Basal Hairs: 1 = Absent () 9 = Present ()4 Margins: 1 = ~~Absent~~ ^{Smooth} () 5 = Semi-rough () 9 = Rough ()6 Width Class: 1 = Very Coarse () 3 = Coarse () 5 = Medium ()

7 = Fine () 9 = Very Fine ()

TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

TILLER LEAF WIDTH MM:

11.22 cm Tiller Leaf Length07.47 mm Tiller Leaf Width01.26 cm Shorter Than 8Length Same As 702.53 cm Longer Than 12

Comparison Variety

01.83 mm Narrower Than 1Width Same As 1001.79 mm ^{Wider} ~~Longer~~ Than 12

(BT: 7/8/08)

Comparison Variety

8. LEAF BLADE: (Continued)

FLAG LEAF LENGTH CM:

* FLAG LEAF WIDTH MM:

#200500194

09.90 cm Flag Leaf Length05.10 mm Flag Leaf Width06.50 cm Shorter Than 101.35 mm Narrower Than 1Length Same As 12Width Same As 10

Comparison Variety

Comparison Variety

___ . ___ cm Longer Than ___

___ . ___ mm Wider Than ___

9. LEAF SHEATH: (Basal Portion)

5 Anthocyanin (Seedling): 1 = Absent (K31) 9 = Present ()3 Auricle Hairiness: 1 = Absent () 9 = Present ()

10. PANICLE: (At seed maturity except where noted.)

6 Shape: 1 = Narrow-tapering () 5 = Ovate () 7 = Oblong () 9 = Other (Specify) _____6 Type: 1 = Compact (appressed) 5 = Intermediate () 7 = Open () 9 = Other (Specify) _____7 Orientation: 1 = Nodding () 9 = Erect ()6 Branch Pubescence: 1 = Glabrous () 9 = Pubescent ()1 Anther Color (At Anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6 = Other (Specify) _____1 Glume Color (At Anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green
4 = Purplish 5 = Reddish 6 = Other (Specify) _____17.45 cm Panicle Length (From base to tip, if nodding, straighten; after anthesis)11.55 cm Shorter Than 4Length Same As 7

Comparison Variety

___ . ___ cm Longer Than ___

11. SEED: (With Lemma and Pelea)

___ mg per 1000 seeds

___ mm Less Than ___

Weight Same As ___

Comparison Variety

___ mm More Than ___

Pelea: (Keels or Margins) ___ Hairs: 1 = Absent () 5 = Short (Missouri 96) 9 = Long ()

Lemma: ___ Hairs: 1 = Absent (Kenhy) 5 = Several () 9 = Long (Missouri 96)

___ . ___ mm Lemma Length (Mature)

___ . ___ mm Lemma Width

___ . ___ cm Shorter Than ___

___ . ___ mm Narrower Than ___

Length Same As ___

Width Same As ___

Comparison Variety

Comparison Variety

___ . ___ cm Longer Than ___

___ . ___ mm Wider Than ___

11. SEED: (continued)

AWNS: 1 = Absent () 9 = Present (Falcon) % Plants with Awns

mm Awn Length (of those present)

mm Shorter Than

Length Same As

mm Longer Than

Comparison Variety

#200500194

12. DISEASE, INSECT, AND NEMATODE REACTION: (0 = Not Tested 1 = Least Resistant 9 = Most Resistant)

0 Melting-out (*Drechslera poae*)

0 Blind Seed (*Gloeotinia temulenta*)

0 Leaf Spot (*D. siccans*)

0 Dollar Spot (*Lanzia, mollerdiscus* spp.)

0 Net Blotch (*D. dictyoides*)

0 Stem Rust (*Puccinia graminis*)

7 Brown Patch (*Rhizoctonia solani*)

7 T. Blight (*Typhula incarnata*)

0 C. Leaf Spot (*Cercospora fectucae*)

8 Pythium Blight (*Pythium* spp.)

0 Pink Snow Mold (*Gerlachia nivalis*)

0 Powdery Mildew (*Erysiphe graminis*)

0 Silver Tip (*F. tricinatum*, *F. roseum*)

0 Crown Rust (*Puccinia coronata*)

Other Disease

Other Insect

Other Nematode

13. ENVIRONMENTAL STRESS:

6 Drought Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

5 Shade Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

4 Winter Stress 1 = Susceptible () 5 = Tolerant () 9 = Resistant ()

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application Variety is Less Than Comparison Variety. 2 = Same as 3 = More Than, Better, Greater, Darker, etc.

Character	Varieties	Rating	Character	Varieties	Rating
Leaf Width	10	2	Leaf Color	12	3
Panicle Color	7	2	Panicle Shape	11	2
Seed Size			Cold Injury	12	2
Winter Color	12	2	Heat	1	2
Disease	12	3			

15. **EXPERIMENTAL:** Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

#200500194

Site Information: Radix Research, Inc. - North Farm in Aumsville, Oregon. This site is located 9 miles east of Salem on Clackamas gravelly loam. This trial was planted in October, 1999.

Design: Randomized Complete Block Design consisting of 3 replications of 12 spaced-plants each on 2 foot spacing.

Maintenance: No irrigation. Two spring applications of 45 lbs. Nitrogen (40-0-0-6) and (46-0-0) each, and one fall application of 35 lbs. Nitrogen (16-16-16) annually.

Data Analysis: 'Statistix for Windows' analytical software program

16. **COMMENTS:**

REPRODUCE LOCALLY. Include form number and edition date on all reproductions.

FORM APPROVED - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICEEXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2425).

1. NAME OF APPLICANT(S) Cascade International Seed Co. (EST: 7/8/2008) Company	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER CAS-mc1, mc1	3. VARIETY NAME turbo
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 8483 WEST STAYTON Rd. Aumsville, ORE 97325	5. TELEPHONE (include area code) 503-749-1822	6. FAX (include area code) 503-749-1824
7. PVPO NUMBER 200500194		

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒ YES☐ NO

Rutgers University owns the original germplasm designated as mc1. Rutgers Licensed all production and marketing rights for mc1 to Cascade International Seed Company.

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☒ YES☐ NO

10. Is the applicant the original owner?

☐ YES☒ NO

If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES☐ NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☒ YES☐ NO

If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

Steve Whitten is the plant Breeder and was employed by Cascade International Seed company. Cascade is the owner and no rights were transferred to the Breeder.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 320-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5894 (voice and TDD). USDA is an equal opportunity provider and employer.

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Form Approved OMB NO 5051-0055

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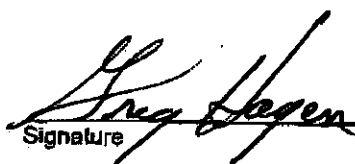
To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-0382 (TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S) Cascade International Seed Company	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 8483 West Stayton Rd. Aumsville, Ore 97325	TEMPORARY OR EXPERIMENTAL DESIGNATION CAS-MC-1 VARIETY NAME turbo
NAME OF OWNER REPRESENTATIVE (S) Greg Hagen General manager	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 8483 West Stayton Rd Aumsville, Ore	PVPO NUMBER 200500194

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.


Signature

July 7 - 2008
Date